

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) An air conditioner comprising:

a plurality of compressors, for compressing a refrigerant, of which at least one compressor is one or more are operated so that refrigerant compression capacity is variably changed according to the variation in of a cooling/heating load;

inlet pipes allowing the refrigerant to be distributed to ~~and introduced into the~~ compressors, and outlet pipes allowing the refrigerant from the compressors to be ~~combined and exhausted;~~

a condenser for condensing the refrigerant compressed by the compressors by transferring heat between ~~heat-exchanging~~ the refrigerant and with air;

an electronic expansion valve for expanding the refrigerant condensed by the condenser by passing the refrigerant through an ~~expanded~~ expansion passage; and

a microcomputer for controlling the electronic expansion valve to be opened by a designated opening degree so that the pressure equilibrium in the compressors is rapidly achieved when, in case that at least one of the or more compressors are ~~is~~ stopped in accordance with the variation in of the cooling/heating load and then ~~re-operated~~ the at least one stopped compressor is restarted.

Claim 2. (Currently Amended) The air conditioner as set forth in claim 1, further comprising:

a plurality of pressure sensors respectively installed at the inlet and outlet pipes connected to the compressors for measuring pressures at said the inlet and outlet pipes ~~connected to the re-operating compressors,~~

wherein the microcomputer controls the electronic expansion valve to be opened by the designated opening degree during a period when the ~~pressures~~pressure sensed by the pressure sensors at the inlet and outlet pipes connected to the at least one restarting compressor ~~re-operating compressors sensed by the pressure sensors reach~~ is adjusting towards equilibrium.

Claim 3. (Currently Amended) The air conditioner as set forth in claim 1, further comprising:

a timer, to which a pressure equilibrium time, which is the time taken to allow pressures at the inlet and the outlet pipes connected to the compressors to reach equilibrium, is inputted in advance, ~~for measuring the pressure equilibrium time,~~

wherein the microcomputer controls the electronic expansion valve to be opened by the designated opening degree for ~~during~~ the pressure equilibrium time as measured by the timer.

Claim 4. (Original) The air conditioner as set forth in claim 3,

wherein the microcomputer sets the designated opening degree of the electronic expansion valve so that the pressure equilibrium time is minimized.

Claim 5. (Original) The air conditioner as set forth in claim 1,

wherein the microcomputer controls the electronic expansion valve to be completely closed when the pressure equilibrium in the compressors is achieved.

Claim 6. (Currently Amended) An air conditioner comprising:

a plurality of compressors, for compressing a refrigerant, of which at least one compressor is one or more are operated so that refrigerant compression capacity is variably changed according to the variation in of a cooling/heating load;

inlet pipes allowing the refrigerant to be distributed ~~and to introduced into~~ the compressors, and outlet pipes allowing the refrigerant from the compressors to be ~~combined and exhausted~~;

a condenser for condensing the refrigerant compressed by the compressors by transferring heat between ~~heat-exchanging the refrigerant and with~~ air;

an electronic expansion valve for expanding the refrigerant condensed by the condenser by passing the refrigerant through an expansion passage; ~~expanded passage~~;

a plurality of pressure sensors respectively installed at the inlet and outlet pipes ~~connected to the compressors~~ for measuring pressures at said ~~the~~ inlet and outlet pipes ~~connected to the re-operating compressors~~; and

a microcomputer for controlling the electronic expansion valve to be opened by a designated opening degree when at least one of the compressors is stopped in accordance with the variation in the cooling/heating load and then restarted, during a period when the pressures at the inlet and outlet pipes ~~connected to the re-operating compressors~~ sensed by the pressure sensors are adjusting towards reach equilibrium; ~~in case that one or more compressors are stopped in accordance with the variation of the cooling/heating load and then re-operated.~~

Claim 7. (Original) The air conditioner as set forth in claim 6,

wherein the microcomputer controls the electronic expansion valve to be completely closed when the pressure equilibrium in the compressors is achieved.

Claim 8. (Currently Amended) An air conditioner comprising:

a plurality of compressors, for compressing a refrigerant, of which at least one compressor is one or more are operated so that refrigerant compression capacity is variably changed according to the variation in of a cooling/heating load;

inlet pipes allowing the refrigerant to be distributed to and introduced into the compressors, and outlet pipes allowing the refrigerant from the compressors to be ~~combined and exhausted~~;

a condenser for condensing the refrigerant compressed by the compressors by transferring heat between ~~heat-exchanging the refrigerant and with~~ air;

an electronic expansion valve for expanding the refrigerant condensed by the condenser by passing the refrigerant through an expansion passage; ~~expanded passage~~;

a timer, to which a pressure equilibrium time, which is the time taken to allow pressures at the inlet and the outlet pipes of ~~the re-operating compressors~~ at least one restarting compressor to reach equilibrium, is inputted in advance, ~~for measuring the pressure equilibrium time~~ the at least one restarting compressor being stopped in accordance with variation in the cooling/heating load and then restarted, and

a microcomputer for controlling the electronic expansion valve to be opened by a designated opening degree; during the pressure equilibrium time measured by the timer ~~timer~~, ~~in case that one or more compressors are stopped in accordance with the variation of the cooling/heating load and then re-operated.~~

Claim 9. (Original) The air conditioner as set forth in claim 8,

wherein the microcomputer sets the designated opening degree of the electronic

expansion valve so that the pressure equilibrium time is minimized.

Claim 10. (Original) The air conditioner as set forth in claim 8,
wherein the microcomputer controls the electronic expansion valve to be completely closed when the pressure equilibrium in the compressors is achieved.

Claim 11. (Currently Amended) A method for controlling an electronic expansion valve of an air conditioner, comprising ~~the steps of~~:

(a) ~~stopping one or more~~ at least one of a plurality of operating compressors in accordance with the decrease in of a cooling/heating load; and

(b) ~~controlling the electronic expansion valve to be opened by a designated opening degree so that the pressure equilibrium in the~~ at least one stopped compressor(s) is rapidly achieved, ~~in case that~~ when the cooling/heating load is increased after the ~~stoppage~~ stopping of the at least one operating compressor ~~compressors in the step (a).~~

Claim 12. (Currently Amended) The method as set forth in claim 11,
wherein controlling further comprises ~~the step (b) includes the step of~~ controlling the electronic expansion valve to be completely closed, after the pressure equilibrium in the at least one stopped compressor ~~compressor(s)~~ is achieved.

Claim 13. (Currently Amended) The method as set forth in claim 11,
wherein the designated opening degree ~~in step (b)~~ is the minimum degree allowing pressures at inlet and outlet pipes connected to the at least one stopped compressor ~~compressor(s)~~ to reach equilibrium within a set time.

Claim 14. (Currently Amended) The method as set forth in claim 13,
wherein the set time is the total ~~sum~~ of a first necessary time ~~taken~~ to allow the pressures within at the inlet and the outlet pipes of the at least one stopped compressor ~~compressor(s)~~ to reach equilibrium and a second necessary time ~~taken~~ to allow the electronic expansion valve to be ~~controlled~~ to be closed.

Claim 15. (Currently Amended) The method as set forth in claim 14,
wherein the first necessary time is ~~the same as~~ a time ~~taken~~ to allow the pressures at the inlet and outlet pipes of the at least one stopped compressor ~~compressor(s)~~ to reach equilibrium ~~under the condition in which~~ when the electronic expansion valve is completely open ~~opened~~.

Claim 16. (Currently Amended) A method for controlling an electronic expansion valve of an air conditioner, comprising ~~the steps of~~:

(a) ~~stopping~~ at least one ~~one or more~~ of a plurality of operating compressors in accordance with the decrease in ~~of~~ a cooling/heating load;

(~~b~~) controlling the electronic expansion valve to be opened by a designated opening degree so that a ~~the~~ pressure equilibrium in at least one ~~the~~ stopped compressor ~~compressor(s)~~ is rapidly achieved ~~in case that~~ when the cooling/heating load is increased after stopping ~~the stoppage of~~ the at least one of a plurality of operating compressors ~~in the step (a); and~~

(~~e~~) controlling the electronic expansion valve to be completely closed ~~closed~~, after the pressure equilibrium is achieved in the at least one stopped compressor

~~compressor(s) is achieved in the step (b).~~

Claim 17. (Currently Amended) The method as set forth in claim 16,
wherein the designated opening degree ~~of step (b)~~ is the minimum degree
allowing pressures at inlet and outlet pipes connected to the at least one stopped
compressor ~~compressor(s)~~ to reach equilibrium within a set time.

Claim 18. (Currently Amended) The method as set forth in claim 17,
wherein the set time is ~~the same as a time taken~~ to allow the pressures at the inlet
and outlet pipe(s) ~~pipes~~ of the at least one stopped compressor ~~compressor(s)~~ to reach
equilibrium when ~~under the condition in which~~ the electronic expansion valve is
completely open ~~opened~~.